INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 2000	**Park:** Glacier Bay NP & PRES
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Name: Elizabeth Ross Hooge **Phone:** (907) 697-2644 **Email:** n/a

Permit#:
N/A

Park-assigned Study Id. #:
unknown

Project Title:
Fjord oceanographic survey and monitoring of Glacier Bay, Alaska.

Permit Start Date: Jan 01, 1990	**Permit Expiration Date** Jan 01, 1990
Study Start Date: Jun 01, 1992	**Study End Date** Jun 01, 2020

Study Status:
Continuing

Activity Type:
Monitoring

Subject/Discipline:
Coastal / Marine Systems

Objectives:

This project involves the monitoring of within and between year oceanographic patterns along the glacial chronosequence in Glacier Bay, Alaska. Glacier Bay exhibits large spatial and temporal differences in oceanographic patterns due to complex fjord and estuarine processes the recent history of glaciation, and large numbers of tidewater glaciers. A lack of understanding of the natural variation in this system make the elucidation of anthropogenic changes problematic and fraught with controversy.

Findings and Status:

This was the eighth year of a continuing study to monitor oceanographic patterns in Glacier Bay. This year marked a significant advance in the analysis of this long term study with the production of an extensive report on the last eight years of efforts, a detailed monitoring handbook, and a two-CDROM data set of all data integrated into a user-friendly GIS. In addition, a software program was created (Oceanographic Analyst) to allow the analysis and visualization of 3 and 4 dimensional oceanographic data sets within a 2D GIS. Field efforts continued this year with eight surveys of twenty-four stations. A profile with salinity, temperature, primary productivity, (chlorophyll a concentration), light penetration, and turbidity was taken at one meter intervals at each site. There were several major findings this year, changing the paradigm of oceanographic dynamics in Glacier Bay, these included: deep water renewal occurring throughout the year, that Glacier Bay is not a traditional estuary but instead is a tidally mixed estuary, that there is a mid-bay front creating conditions for extremely high primary productivity which was observed to continue throughout the spring, and that temperatures have increased since the 1960s which may explain the lowered salinity and some of the major differences seen in this study.

Reports Produced:

1)Fjord Oceanographic Processes in Glacier Bay

2)Fjord Oceanographic Monitoring Handbook: Glacier Bay

3)Glacier Bay Oceanography CDROM

4)The Oceanographic Analyst Software CDROM

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

No

Funding provided this reporting year by NPS:	**Funding provided this reporting year by other sources:**
52000	40000

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university:	**Annual funding provided by NPS to university or college this reporting year:**
N/A	0